

AMENDMENTS TO THE CLAIMS

Claims 1-30 (Canceled)

31. **(Currently amended)** An occlusion clip applicator comprising:

a jaw push tube having proximal and distal push tube ends and a jaw push tube interior;
an elongate clip holder formed as a channel having first and second support rails attached thereto, the first and second support rails being substantially parallel and in alignment with each other, the clip holder having proximal and distal clip holder ends and being disposed inside the jaw push tube interior;

a clip pusher having an elongate support member ~~having upper and lower sides with a plurality of clip push fingers attached to the lower side support member~~, the support member being mounted ~~within the jaw push tube interior substantially parallel to the clip holder with such that~~ at least a portion of each clip push finger ~~extending downward extends~~ into the channel interior; and

a pair of jaws, each jaw having:

proximal and distal jaw ends,

an inner engaging side and an opposite outer side,

a clip slot formed through the jaw from the inner engaging side to the outer side and extending distally from and through the proximal jaw end, ~~and~~

a pair of parallel support shelves bounding at least a portion of the clip slot, the support shelves each having an outer surface facing away from the inner engaging side of the jaw; and

a pair of ramps bounding a proximal portion of the clip slot, the ramps having outer surfaces that are aligned with the respective support rails of the clip holder and are continuous with the outer surfaces of the respective support shelves;

wherein the jaws are: being

pivotably mounted at their proximal ends to the distal clip holder end; and being

configured for engagement by the distal tube end for selective rotation between a fully open position and a closed position ~~wherein in which~~ the engaging sides of the jaws are in contact with each other.

32. (Original) An occlusion clip applicator according to claim 31 wherein the clip slot terminates in an ejection opening adjacent the distal jaw end, the clip slot having a slot width and the ejection opening having an ejection opening width that is greater than the slot width.
33. ~~(Canceled) An occlusion clip applicator according to claim 32 wherein the jaws each have a pair of ramps bounding a proximal portion of the clip slot, the ramps being aligned with the support shelves and the support rails of the clip holder.~~
34. (Original) An occlusion clip applicator according to claim 31 wherein the support rails define a gap between the support rails, the gap being sized so that a first portion of an occlusion clip is narrower than the gap and so that a second portion of the occlusion clip is wider than the gap thus allowing the clip to be slidably disposed in the clip holder with the second portion of the clip engaging the support rails.
35. (Original) An occlusion clip applicator according to claim 34 wherein the clip push fingers each terminate in a clip engagement foot configured to engage a third portion of the occlusion clip so that distal movement of the clip pusher causes the occlusion clip to slide distally along the support rails.
36. (Original) An occlusion clip applicator according to claim 31 further comprising:
means for selectively moving the jaw push tube in a distal direction to engage the jaws and cause them to rotate from the open position to the closed position; and
means for selectively moving the clip pusher in the distal direction to cause distal movement of at least one occlusion clip disposed in the clip holder.
37. (Original) An occlusion clip applicator according to claim 36 wherein the means for selectively moving the jaw push tube and the means for selectively moving the clip pusher are adapted for moving the jaw push tube and the clip pusher in a predetermined sequence initiated by a user.
38. (Original) An occlusion clip applicator according to claim 31 further comprising:

an actuator operatively associated with the jaw push tube and the clip pusher and configured to produce selective distal and proximal movement of the jaw push tube and the clip pusher relative to the clip holder.

39. (Original) An occlusion clip applicator according to claim 38 wherein the actuator is adapted to produce the distal movement of the jaw push tube and the clip pusher in a predetermined sequence initiated by a user.
40. (Original) An occlusion clip applicator according to claim 38 further comprising:
a tube housing defining a tube chamber, the proximal push tube end, the proximal clip holder end and at least a portion of the actuator being disposed in the tube chamber.
41. (Original) An occlusion clip applicator according to claim 40 further comprising:
a handle assembly attached to the tube housing, the handle assembly having a handgrip with a handgrip interior space and a trigger rotatably mounted to the handgrip, the trigger being operatively associated with the actuator for selective activation thereof.
42. **(Currently amended)** An occlusion clip applicator for storing and applying a plurality of occlusion clips each having an upper occlusion member, ~~having substantially parallel first and second upper occlusion arms connected by an upper arcuate portion at their distal ends~~ and a lower occlusion member, ~~having substantially parallel first and second lower occlusion arms connected by a lower arcuate portion~~ and a torsion spring connecting a proximal end of the ~~first~~ lower occlusion arm to a proximal end of the ~~second~~ upper occlusion arm, the upper and lower occlusion members defining a main body of the clip, having a maximum main body width, and a distal portion of the clip, having a maximum distal arcuate-portion width greater than the maximum main body width, the torsion spring providing a pivot axis for rotational separation of the upper occlusion member and the lower occlusion member and providing a biasing force to bias the occlusion clip toward a closed configuration, the applicator comprising:
a jaw push tube having proximal and distal push tube ends and a jaw push tube interior;
an elongate clip holder configured to hold the plurality of occlusion clips, the clip holder being formed as a channel having first and second support rails attached thereto, the first and second support rails being substantially parallel and in alignment with each

other and defining a gap with a gap width dimension that is greater than the main body width of the occlusion clips and less than the maximum distal portion areuate width of the occlusion clips, the clip holder having proximal and distal clip holder ends and being disposed inside the jaw push tube interior;

a clip pusher having an elongate support member ~~having upper and lower sides with a~~ plurality of clip push fingers attached to the ~~lower side~~ support member, the support member being mounted ~~within the jaw push tube interior substantially parallel to the clip holder with~~ such that at least a portion of each clip push finger extending downward extends into the channel interior; and

a pair of jaws, each jaw having:

proximal and distal jaw ends,

an inner engaging side and an opposite outer side,

a clip slot formed through the jaw from the inner engaging side to the outer side and extending distally from and through the proximal jaw end, and

a pair of parallel support shelves bounding at least a portion of the clip slot, the support shelves each having an outer surface facing away from the inner engaging side of the jaw; and

a pair of ramps bounding a proximal portion of the clip slot, the ramps having outer surfaces that are aligned with the respective support rails of the clip holder and are continuous with the outer surfaces of the respective support shelves;

wherein the jaws are: being

pivotably mounted at their proximal ends to the distal clip holder end; and being

configured for engagement by the distal tube end for selective rotation between a

fully open position and a closed position in which wherein the engaging sides of the jaws are in contact with each other; and[[,]]

wherein the clip slot has a width dimension that is greater than the maximum main body

width of the occlusion clips and less than the maximum distal portion areuate-width of the occlusion clips.

43. **(Currently amended)** An occlusion clip applicator according to claim 42 wherein the clip slot terminates in an ejection opening adjacent the distal jaw end, the ejection opening having an ejection opening width that is greater than the maximum distal portion areuate width of the occlusion clips.
44. ~~(Canceled) An occlusion clip applicator according to claim 42 wherein the jaws each have a pair of ramps bounding a proximal portion of the clip slot, the ramps being aligned with the support shelves and the support rails of the clip holder.~~
45. (Original) An occlusion clip applicator according to claim 42 wherein the clip push fingers each terminate in a clip engagement foot configured to engage the distal portions ~~upper areuate portions~~ of the occlusion clips so that distal movement of the clip pusher causes the occlusion clips to slide distally along the support rails.
46. (Original) An occlusion clip applicator according to claim 42 further comprising:
means for selectively moving the jaw push tube in a distal direction to engage the jaws and cause them to rotate from the open position to the closed position; and
means for selectively moving the clip pusher in the distal direction to cause distal movement of at least one occlusion clip disposed in the clip holder.
47. (Original) An occlusion clip applicator according to claim 46 wherein the means for selectively moving the jaw push tube and the means for selectively moving the clip pusher are adapted for moving the jaw push tube and the clip pusher in a predetermined sequence initiated by a user.
48. (Original) An occlusion clip applicator according to claim 42 further comprising:
an actuator operatively associated with the jaw push tube and the clip pusher and configured to produce selective distal and proximal movement of the jaw push tube and the clip pusher relative to the clip holder.
49. (Original) An occlusion clip applicator according to claim 48 wherein the actuator is adapted to produce the distal movement of the jaw push tube and the clip pusher in a predetermined sequence initiated by a user.
50. (Original) An occlusion clip applicator according to claim 48 further comprising:

a tube housing defining a tube chamber, the proximal push tube end, the proximal clip holder end and at least a portion of the actuator being disposed in the tube chamber.

51. (Original) An occlusion clip applicator according to claim 50 further comprising:

a handle assembly attached to the tube housing, the handle assembly having a handgrip with a handgrip interior space and a trigger rotatably mounted to the handgrip, the trigger being operatively associated with the actuator for selective activation thereof.

52. **(Currently amended)** An occlusion clip applicator according to claim 31 further comprising:

a handle assembly having a trigger and a handgrip with a handgrip interior space;

a tube housing attached to the handle assembly and defining a tube chamber in communication with the handgrip interior space, the tube chamber and the handgrip interior space combining to form an actuator space; and
an actuator disposed in the actuator space, the actuator configured for engagement and selective actuation by the trigger;

~~a jaw push tube having a proximal tube end attached to the actuator and a distal tube end, a portion of the jaw push tube being slidably disposed within the tube housing;~~

~~a clip holder formed as a channel having opposing first and second side wall members and a base member defining a clip holder interior, a first support rail attached to the first side wall member and projecting into the clip holder interior and a second support rail attached to the second side wall member and projecting into the clip holder interior, the first and second support rails being substantially parallel and in alignment with each other, the clip holder having proximal and distal clip holder ends and being disposed inside the jaw push tube;~~

~~a clip pusher having an elongate support member having upper and lower sides with a plurality of clip push fingers attached to the lower side, the support member being mounted within the jaw push tube interior substantially parallel to the clip holder with at least a portion of each clip push finger extending downward into the channel; and~~

~~a jaw assembly comprising upper and lower jaws, each jaw having proximal and distal jaw ends and being pivotably mounted at its proximal end to the clip holder adjacent the distal clip holder end and configured for engagement by the distal tube end for selective rotation between a fully open position and a closed position; the upper and lower jaws each having a pair of support shelves bounding a central clip slot extending from and through the proximal jaw end to an ejection passage adjacent the distal jaw end.~~

- 53. (Original) An occlusion clip applicator according to claim 52 wherein the clip slot terminates in an ejection opening adjacent the distal jaw end, the clip slot having a slot width and the ejection opening having an ejection opening width that is greater than the slot width.
- 54. ~~(Canceled) An occlusion clip applicator according to claim 52 wherein the jaws each have a pair of ramps bounding a proximal portion of the clip slot, the ramps being aligned with the support shelves and the support rails of the clip holder.~~
- 55. (Original) An occlusion clip applicator according to claim 52 wherein the support rails define a gap between the support rails, the gap being sized so that a first portion of an occlusion clip is narrower than the gap and so that a second portion of the occlusion clip is wider than the gap, thus allowing the clip to be slidably disposed in the clip holder with the second portion of the clip engaging the support rails.
- 56. (Original) An occlusion clip applicator according to claim 55 wherein the clip push fingers each terminate in a clip engagement foot configured to engage a third portion of the occlusion clip so that distal movement of the clip pusher causes the occlusion clip to slide distally along the support rails.

Claims 57-68 (Canceled)

- 69. (New) An occlusion clip applicator according to claim 34 wherein the clip push fingers each terminate in a clip engagement foot configured to engage the second portion of the occlusion clip so that distal movement of the clip pusher causes the occlusion clip to slide distally along the support rails.
- 70. (New) An occlusion clip applicator according to claim 55 wherein the clip push fingers each terminate in a clip engagement foot configured to engage the second portion of the occlusion

clip so that distal movement of the clip pusher causes the occlusion clip to slide distally along the support rails.